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New Ceratinini from Australia (Hymenoptera, Apoidea) ¹

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The following descriptions are published at this time, in advance of a larger work on the systematics of Australian bees, in order to make the names available for papers on the behavior and larval structure of the species concerned.

Exoneurella new genus.

Type species: *Exoneura lawsoni* Rayment, 1946.

This genus is erected to contain a small black species similar in appearance to a small species of *Exoneura*. The genus is related to *Exoneura* as shown by the body form, the soft shining integument, the shape of the clypeus, and agrees with *Exoneura* also in the following features: Mandibles tridentate in female, rounded edentate in male; maxillary palpi five segmented; wings with venation as in *Exoneura* except as described below; graduli of second to fourth sterna faint, weakly recurved medially; genitalia of male with stylus reduced, broader than long, probably immovable, penis valve large, armed with long anteriorly directed bristles on outer surface.

Exoneurella most closely resembles such small species of *Exoneura* as *E. ploratula* Cockerell and *gracilis* Cockerell. It agrees with such species not only in size but in the following features which are group characters within the genus *Exoneura*: Clypeus closely approaching antennal bases so that clypeoantennal distance is in both sexes (especially male) less than diameter of antennal

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socket; scape not reaching anterior ocellus; head and thorax of male not covered with long dense hairs; eyes of male not dilated, separated by distance greater than ocular width; fore tarsi of male of ordinary form, not attenuate, first two segments taken together slightly shorter than tibia; hind basitarsus of male shorter than tibia, about half as wide as tibia, parallel sided; vein Cu_1 represented by a short stub, ending abruptly, and not or scarcely continued as a brownish line; pterostigma large and broad, as long as costal margin of marginal cell.

The following are the distinctive features of the genus which separate it from all species of *Exoneura*: Second submarginal cell narrowed toward costal margin which is short, often less than half as long as first transverse cubital vein; basitibial plate not defined; sixth tergum of female distinctly concave dorsally, profile distinctly concave, apex produced to median, bidentate, upturned projection which is not at all hidden by hair as is the far smaller median projection of *Exoneura*.

In addition to the characters of the adults, *Exoneurella* differs from *Exoneura* in striking features of the larva. Larvae of *Exoneurella* lack ventrolateral projections on the body segments which occur in *Exoneura* and have large ventroposterior hairy projections on the sides of the head which are absent in *Exoneura*. The details of the larval structure will be described and illustrated by Syed (1962).

The immature stages of *Exoneurella* live together in a hollowed pithy stem as in *Exoneura* and not in separate cells as in *Ceratina*. The individual females are solitary, not forming associations of several adult females in a single nest such as occur in *Exoneura* and *Allodapula*.

Exoneurella lawsoni (Rayment)

Exoneura lawsoni Rayment, 1946, Victorian Naturalist, 62: 230 (male, not female or larva).

Rayment included material from more than one nest and evidently of two species in his description of *lawsoni*. The male is the most fully described sex and the labeled type in the collection of the Commonwealth Scientific and Industrial Research Organization in Canberra is a male. Therefore the specific name should be applied to the male. The larvae and presumably the female described by Rayment belong to a species of *Exoneura*. The parallel inner orbits and the lack of pale yellow at the bases of the tibiae

are among the characters of the female attributed to *lawsoni* by Rayment which do not agree with my females of *lawsoni*.

FEMALE: Length 5.0 to 5.75 mm. *Color:* Shining black, with cream-colored mark on clypeus extending from upper nearly to lower margin, sides nearly parallel except that at upper end pale mark abruptly expands to full width of clypeus so that mark is T-shaped. Posterior pronotal lobe, costal sclerite of wing base, and small spots at apices of femora and bases of tibiae cream colored. Labrum and antenna (especially under surface of flagellum) brownish; anterior tibia and tarsus yellowish brown; middle and hind basitarsi grayish brown; other tarsal segments brown; tegula translucent brown. *Pubescence:* Short, sparse, grayish white, scopa similar to that of *Exoneura*, hairs of dorsum of fourth tergum longer than those of other terga and slightly spiculate so that they appear thick. *Structure:* Relative head measurements as follows: width 19.5; length 17.5; lower interocular distance 9.5; upper interocular distance 13; clypeal length 8. Genal area in side view rounded posteriorly, about three-fourths as wide as eye seen in same view; basitarsi shorter than corresponding tibiae, first two tarsal segments equal in length to anterior tibia, longer than middle and hind tibiae. *Punctuation:* Clypeus with punctures, surface minutely roughened; rest of face impunctate or nearly so; meso-scutum impunctate except for extreme margins which are minutely roughened or finely punctate; scutellum distinctly punctured, metanotum and dorsal surface of propodeum dull, roughened, rest of thorax impunctate except for minute piliferous punctures; metasoma with surface minutely roughened, that of last three terga almost dull; first three terga with scattered rather coarse punctures; last three terga with coarser and closer punctures.

MALE: Length 4 mm. Similar to female. Differing from description as follows: Entire clypeus, small lateral face marks next to broad part of clypeus (sometimes extending upward to above level of tentorial pits), most of labrum, small subapical mandibular area, and under surface of scape pale yellow; tarsi testaceous, middle and hind basitarsi dull whitish. Hairs of fourth tergum not longer than those of others. Shape of clypeus and face about as in female, eyes more strongly converging below so that antennocular and upper clypeocular distances are only about equal to width of scape; genal area less than half as wide as eye seen from side.

Localities: Deepwater, New South Wales; four miles south of

Warwick, Stanthorpe, and Kilcoy, Queensland. Dates of activity will be given in a forthcoming paper on the habits of this species.

Some of the females from Warwick and Kilcoy have the lateral margins of the sixth tergum of the female a little more produced, shoulder like, than in specimens from the highlands of New South Wales and southernmost Queensland.

All specimens were from nests, mostly in dead stems of *Verbena bonarensis* and other weeds.

Exoneura obscuripes new species

This is a large *Exoneura* similar to *E. hamulata* Cockerell, *bicolor* Smith, etc., which species it resembles in the broad head with the inner orbits subparallel. It differs from the above-mentioned species in having dark brown or black legs with brown to black hair on them and in the largely black first three metasomal terga. The dark coloration is like that of *E. baculifera* Cockerell, which, however, is a somewhat smaller bee with the inner orbits distinctly converging below. The species of *Exoneura* are often very similar in adult characters. The larva of *obscuripes* will be described by Syed (1962).

FEMALE: Length nearly 8 mm. *Color:* Head and thorax black; underside of flagellum brown; underside of scape, median mandibular area, and part of labrum dark red brown; legs dark brown (black in some paratypes); tegula dark translucent brown; clypeus with pale yellow mark extending full length of clypeus, narrowest near apical margin, upper end extending full width (or nearly so) of clypeus, not or little hooked downward at dorsolateral angles, therefore reaching (or nearly reaching) upper lateral clypeal margins but not extending down along them for any great distance; margins of yellow area in most specimens not sharply defined. Metasoma dark red, first and second terga black (sometimes with apical margins red, second sometimes with basolateral or apicolateral red patches); third tergum with broad transverse median black band. *Pubescence:* Short and sparse, that of head black, on underside fuscous or in certain lights reddish; that of thorax fuscous or gray, somewhat reddish beneath; that of legs grayish, yellowish on upper surfaces and yellowish red on under surfaces of fore and middle tarsi; scopa of hind tibia and basitarsus (and sometimes hairs of outer side of middle basitarsus) black, appearing reddish in some lights (dark reddish brown in some paratypes); metasoma with tergal pubescence black, sternal pubescence dull whitish.

Structure: Relative head measurements as follows: width 12.2, length 10; lower interocular distance 6.8; upper interocular distance 7.5; clypeal length 4.6. Genal area in side view rounded posteriorly, slightly wider than eye seen in same view; front and hind basitarsi slightly shorter than corresponding tibiae, middle basitarsus longer; vein Cu_1 gradually tapering, not a short stub. *Punctuation:* Not different from that of *E. hamulata*.

HOLOTYPE FEMALE: Binna Burra, near Lamington National Park, McPherson Range, southern Queensland, December 8, 1958, in nest number 292 (C. D. Michener). Four paratype females: same data, but from nests numbered 277 and 290. Four paratype females, same locality, January 11, 1959, from nests numbered 457 and 458 (Mary H. Michener).

The holotype will be deposited in the collection of the Commonwealth Scientific and Industrial Research Organization, Canberra; paratypes will be placed in the Snow Entomological Museum, University of Kansas, and the British Museum (Natural History).